

REMARKS

Claims 32-48 are pending in the application with claims 32 and 38 amended herein. Applicant expresses appreciation for the allowance of claims 42-48.

Claims 32-41 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Qian. Applicant requests reconsideration.

Amended claim 32 sets forth a method that includes, among other features, cleaning an accumulated deposition from a vaporization surface where a non-vapor state material is converted to a vapor-state in a vapor forming device by using the vaporization surface as an electrode to form a plasma within the device. Pages 2-3 of the Office Action acknowledge that Qian does not teach cleaning an accumulated deposition from a vaporization surface. However, the Office Action alleges that cleaning an accumulated deposition from a vaporization surface is an obvious variation of cleaning an etching residue from etching chamber walls by using the walls as an electrode to form a plasma within the etching chamber. A finding of prima facie obviousness requires that the prior art disclose or suggest every claim limitation. Accordingly, the Office essentially alleges that it is obvious to modify Qian so as to suggest cleaning an accumulated deposition from a vaporization surface.

Obviousness can be established by modifying a reference, but not unless there is some motivation in the art to support the modification. Also, the mere fact that the prior can be modified does not make the modification obvious unless the prior art suggests the desirability of the modification. Accordingly, if a proposed modification of the prior art would render the prior art process inoperable for its intended purpose, then no suggestion or motivation exists to make the proposed modification.

Applicant notes that claim 32 is amended to incorporate the definition of "vaporization surface" set forth at least on page 2, lines 14-17 of the present specification. Accordingly, the amendment positively recites that a vaporization surface is a surface where a non-vapor state material is converted to a vapor-state. Review of Qian reveals that the only "vaporization surface" described therein is discussed in column 1, lines 18-29. Namely, the "vaporization surface" of Qian is the substrate placed in the etching chamber for etching. The non-vapor state material converted to a vapor-state is the substrate material being etched and the mask or resist layer applied on the substrate. The walls of the etching chamber are not vaporization surfaces.

Applicant asserts that no motivation exists to modify Qian to disclose cleaning an accumulated deposition from the substrate placed in the etching chamber. First, Qian does not disclose any vaporization surface that accumulates a deposition in the vapor forming device. The Qian substrate is etched while in the etching chamber and so it does not accumulate any deposition. Only the Qian walls accumulate a deposition and such walls are cleaned in Qian simultaneously with the etching. After the etching, the Qian substrate is removed from the etching chamber and so no vaporization surface is even present in the etching chamber for possible cleaning. Second, since the Qian substrate does not accumulate any deposition, no motivation exists modify Qian to clean an accumulated deposition from the substrate. Third, the purpose of placing the Qian substrate in the etching chamber is to etch the substrate material and/or mask or resist layer. Thus, it would frustrate an intended purpose of Qian to subject the substrate to a cleaning process in addition to the intended etching process.

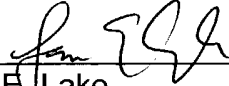
Accordingly, the claimed method cannot be considered an obvious variation of cleaning an etching residue from etching chamber walls since no motivation exists to modify Qian to produce the claimed method. Also, even if Qian were modified to produce the claimed method, such modification would frustrate the intended purpose of Qian. At least for the reasons indicated herein, Qian fails to disclose or suggest every limitation of claim 32 and claim 32 is patentable over Qian. Claim 33-37 depend from claim 32 and are patentable over Qian at least for such reason as well as for the additional limitations of such claims not disclosed or suggested.

Amended claim 38 sets forth a method of cleaning a vaporization surface in a vapor forming device that includes, among other features, using the vaporization surface where a non-vapor state material is converted to a vapor-state as an electrode to form a plasma within the device. The plasma cleans at least some of accumulated deposits from the vaporization surface. As may be appreciated from the discussion above regarding the deficiencies of Qian as applied to claim 32, Qian fails to disclose or suggest every limitation of claim 38. Claims 39-41 depend from claim 38 and are patentable at least for such reason as well as for the additional limitations of such claims not disclosed or suggested.

Applicant herein establishes adequate reasons supporting patentability of claims 32-48 and requests allowance of all claims in the next Office Action.

Respectfully submitted,

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